INSTITUTIONAL OWNERSHIP, GROWTH OPPORTUNITY AND CORPORATE RISK TAKING: EVIDENCE FROM MALAYSIA PUBLIC LISTED FIRMS

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ABSTRACT

This study investigates the effects of institutional ownership and growth opportunity on corporate risk taking. The relationships are examines using a sample of 522 non-financial firms from Bursa Malaysia with a 15 years timespan covering from the year 2000 until 2014. There is limited attention in the literature in regards to corporate risk taking. Volatility of corporate earnings is used to proxy for corporate risk taking. The main independent variables are institutional ownership and growth opportunity, while firm age, firm size, tangibility, leverage and profitability are included control variables. This study reports robust evidence that institutional ownership is negatively associated to corporate risk taking. This findings indicates that institutional shareholders that act as a monitoring mechanism have the capabilities to monitor and control the managerial activities to safeguard and to mitigate the excessive risk taking behaviour. However, the evidence on growth opportunity is not consistently significant, suggesting the need to further explore this relationship. Moreover, this study finds that firm age, firm size, leverage, tangibility and profitability are associated to corporate risk taking.

Keywords: institutional ownership, growth opportunity, risk taking

ABSTRAK

Kajian ini mengkaji kesan pemilikan institusi dan peluang pertumbuhan aktiviti pengambilan risiko korporat. Hubungan adalah meneliti menggunakan sampel 522 syarikat bukan kewangan daripada Bursa Malaysia dengan 15 tahun kitar masa meliputi dari tahun 2000 sehingga 2014. Terdapat perhatian terhad dalam kesusasteraan dalam hal pengambilan risiko korporat. Turun naik pendapatan korporat digunakan untuk proksi untuk pengambilan risiko korporat. Pembolehubah bebas utama ialah pemilikan institusi dan peluang pertumbuhan, manakala umur firma, saiz firma, aset ketara, hutang dan keuntungan termasuk pembolehubah kawalan. Kajian ini melaporkan bukti kukuh bahawa pemilikan institusi negatif yang dikaitkan dengan pengambilan risiko korporat. Dapatan ini menunjukkan bahawa pemegang saham institusi yang bertindak sebagai mekanisme pemantauan mempunyai keupayaan untuk memantau dan mengawal aktiviti-aktiviti pengurusan untuk melindungi dan mengurangkan risiko yang berlebihan mengambil tingkah laku. Walau bagaimanapun, bukti peluang pertumbuhan tidak konsisten ketara, menunjukkan keperluan untuk meneroka hubungan ini. Selain itu, kajian ini mendapati bahawa umur firma, saiz firma, hutang, aset ketara dan keuntungan adalah berkaitan dengan pengambilan risiko korporat.

Kata kunci: pemilikan institusi, peluang pertumbuhan, pengambilan risiko

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CHAPTER 1
INTRODUCTION

1.1 Background of the Study

Corporate risk taking could boost economic growth but risk taking is uncertain. It varies for every firm depending on the firm specific factor such as firm size, growth opportunity, leverage, profitability and industry specific factors such as diversity of business lines. Various individual decisions making with different motivations results in different risk taking preferences and beliefs (Santos, 2013). The differences in risk preferences are of certain empirical interest in corporate finance as different risk preference would have different effect on the capital structure and investment decisions of firms.

Risk taking is argued to be an important source of competitive advantages (Rumelt, 1974; Porter, 1980). Firms have to take higher risk to innovate and create economic value in competitive and complex global economy. For example, firms require technological change to drive the growth to improve the level of total output that would result in increasing firms' profitability. It is argued that high growth firms have potential in increasing future growth opportunity. The growth opportunities may arise from valuable resources or attractive locations (Barney, 1991; Lado, Boyd, and Wright, 1992; Wright, Ferris, Hiller and Kroll, 1995; Wright, Kroll and Parnell, 1996). Firms with higher growth opportunity have the incentives to take riskier investment projects that would increase the firms' value (John, Litov and Yeung, 2008). Prior studies also suggest that corporate structures may affect risk taking behaviour in firms' growth opportunities, but the absence of growth opportunities might not be associated to risk taking.

Though value cannot be created without risk taking, excessive risk taking could be harmful to firms (Carey and Stulz, 2005). Prior studies show that the key factor that contribute to the 2008 market turmoil in United States is due to excessive corporate risk taking (Pinyo, 2008; Shah, 2009; Jickling, 2010). The excessive risk taking results in massive bankruptcies and the consequences could be felt in the world economy (Teodora, 2009). In short, excessive risk taking can trigger a domino like systemic collapse of other firms or markets.

Generally, financial regulations focus on positioning managerial and investors' interest on the assumption that investors would oppose to excessively risky business venture (Schwarcz, 2015). However, agency theory argues that managers are likely to make decisions for themselves and they may not always act in the best interest of shareholders (Jensen and Meckling, 1976). Managers who take on the exposure of risky investments are likely to neglect the demand for transparency by shareholders to avoid potential labor and capital market penalties (Vyas, 2009). Nonetheless, shareholders may require firms to engage in higher risk taking to increase the value of their equity holdings, while managers are risk adverse to secure their non-diversifiable human capital in a firms (Teodora, 2009).

Institutional investors are large investors, who exercise preference over investment of others. Institutional investors includes insurance companies (life and non-life), pension funds, investment trusts (including unit trusts), financial institutions (including banks, finance companies, building societies and credit cooperatives), investment companies, and other nominee companies (Lang and McNichols, 1997). The involvement of institutional shareholders has potential to reduce the agency conflict by monitoring managerial activities (Shleifer and Vishny, 198l Huddart, 1993;

Adwati, Pfleiderer and Zechrer, 1994; Mang, 1998; Noe, 2002; Alireza and Ali Tahbaz, 2011). Institutional investors can exercise influence over firms to encourage good corporate governance because they are in a unique position and as major player in the global economy due to the substantial ownership they hold (Ayoib and Abdullah, 2014). They also have the right to access information and possess the resources to build necessary monitoring. In brief, they can ensure management works in the best interest of the shareholders by leading an ownership culture (Securities Commission Malaysia, 2011).

Moreover, institutional investors can structure the nature of the firms' risk taking behaviour which affects the firms' abilities to compete and to remain sustainable in the markets (Wright et al., 1996). In corporate world, the issue of risk taking should be a concern because it affects firms' earnings volatilities (Teodora, 2009: Hock, Chong and Hishamuddin, 2013). Institutional investors could collect information to monitor managers because they are provided with appropriate incentives, so as to maximise their profits (Shleifer and Vishry, 1986; Grossman and Hart, 1980; Amihud and Lev, 1981). They may take more conservative projects that reduce the value of firms to secure those benefits because private benefits are important to large shareholders (John et al, 2008). Private benefits is an economic gain by institutional shareholders from exerting influence in a firms at the expenses of small shareholders. Therefore, institutional investor as monitoring device helps to promote corporate governance to reduce agency conflict by understanding the differences in risk taking preferences across firms.

Institutional investors are used as the strategic vehicles of to reduce the equity imbalance among races in Malaysia in the New Economic Policy (NEP). They act as a

monitoring agent that provides them capabilities to promote better corporate governance and appropriate behaviour in firms to ensure sustainable long term value or their shareholders. Institutional investors on behalf of the boards, they have accountability in monitoring the well-being of the firms.

This study examines how institutional ownership and growth opportunities affect firms risk taking behaviour using a sample of non-financial public-listed firms in Malaysia. In 2013, the overall institutional shareholdings was at 11 percent of the total market capitalisation. The five largest public institutional investors include the Employees Provident Fund (EPF), Lembaga Tabung Angkatan Tentera (LTAT), Permodalan Nasional Berhad (PNB), Lembaga Tabung Haji and National Security Organisation of Malaysia (PERKESO). In total, the shareholdings' of these five institutional investors represent about 70 percent of the total institutional shareholdings of the firms listed on Bursa Malaysia's Main Board (Effiezal, Janice and Peter, 2008).

1.2 Problem Statement

Understanding the effects of institutional ownership on corporate risk taking behaviour determined by managerial risk choices in corporate investment decisions is important to stimulate firms' growth and productivity (John et al, 2008). However, in the context of Malaysia, there are limited empirical evidence pertaining to the non-financial firm. Prior studies on corporate risk taking in Malaysia mainly focuses on financial firm such as the insurance companies (Ng, Chong, and Ismail, 2013), and banking institutions (Nordin and Hamid, 2013; Azureen and Anis, 2013; Nasyra, Rasidah, and Fauzians, 2015). These studies examine the relationship between corporate risk taking and the performance of the insurance companies as well as the banking institutions, but the key question, *"Can institutional investors mitigate excessive corporate risk taking behaviour?"* has not been answered. In fact, this question is important to the firms' sustainability. For example, when a firm with weak governance takes on excessive level of risk and fails, it would lead to an adverse effect on the firm's performance as well as the sustainability of the firms.

High risk taking with the presence of firms' growth opportunities enhance firm performance and shareholders wealth (Wright, Ferris and Awasthi, 1996). Sustained growth opportunities results in higher levels of economic development. Previous study suggest that growth opportunities are significantly related to corporate risk taking. Managers of high growth opportunities firms are motivated to choose high risk investments that would increase the value of the firms (Galai and Masulis, 1976). The demand in innovation and improvements in quality in the globalised market promote

more growth opportunities and competition that forces firms to take more risk investment projects to maximise shareholders' wealth (Zingales, 2000; Cao, Simin and Zhao, 2008). Thus, increasing the firms' value by higher risk taking benefits the shareholders. However, prior studies suggests that the impact of growth opportunity on risk taking has become unclear as to whether high growth firms still prefer high risk taking over time (Chaganti and Damanpour, 1991; Cao, Simin and Zhao, 2008). Hence, it is indistinguishable whether firms' growth opportunity leads to higher or reduce risk taking (Clemens and Heinemann, 2006; John, Litov and Yeung, 2008).

Moreover, the effects of institutional shareholders on corporate risk taking remain largely unexplored (Bromiley, 1991; John et al., 2008; Boubakri et al., 2012), such as in Malaysia. Corporate risk taking behaviour is vital for long term economic development (Baumol, Litan and Schramm, 2007). Prior studies on corporate risk taking mainly seek evidence from developed market such as United States (Holderness, 2009; Teodora, 2009; John, Litov and Yeung, 2008; Wright, Kroll and Pettus, 2007; Claessens, Djankov and Nenova, 2000), United Kingdom and German (Martin and Sebastian, 2011), and Japan (Nakano and Nguyen, 2012). Though Malaysia is a developing country, it is looking forward to become a developed country, thus to stay competitive in a complex and dynamic global economy firms have to take greater risk to innovate and to create added value. Here, good governance is important to mitigate excessive risk taking behaviour. It is argued that institutional investors have significant effect on firms' financial decisions. Therefore, it is relevant to examine the function of institutional shareholders as a monitoring agent to encourage good corporate governance. An insight on how institutional ownership can mitigate any excessive corporate risk taking behaviour would be significant for Malaysian.

1.3 Research Question

The two main research questions to be answered in this study are as follows:

1. Could institutional ownership mitigate corporate risk taking behaviour?
2. What are the relationship between growth opportunities and corporate risk taking?

1.4 Research Objectives

The research objectives of this study are as follows:

1. To examine if institutional ownership can mitigate corporate risk taking behaviour.
2. To examine the relationship between growth opportunity and corporate risk taking.

1.5 Significance of Study

The findings of this study can contribute to the corporate finance literature, specifically on the area of (1) corporate governance related to the importance of institutional ownership to mitigate corporate risk taking behaviour and (2) firm growth and its effect on corporate risk taking behaviour. In fact, this study contributes to the literature in several ways to the academicians. It examines the key determinants and provides empirical findings that risk taking behaviour are affected by the characteristic of institutional ownership (Faccio, Marchica and Mura, 2011). Hence, this would enable the academicians or researchers to gain additional insight pertaining to corporate risk taking issues. The academicians would have a window of opportunity to further the research related to this issue and to further understanding the relationship between institutional ownership, growth opportunities and corporate risk taking.

In addition, the findings of this study can be a reference to the policy makers in creating more beneficial policies and revising current regulations to improve the corporate governance among Malaysian firms that would assist firms in Malaysia to stay sustainable and to stimulate the Malaysian economy through chain reaction. For the investors, they would have an outlook about the corporate risk taking behaviour of non-financial firms in Malaysia. This would help them to make a better investment decision.

Furthermore, the findings may provide an insight of how growth opportunities and risk taking are related to the corporate managers. This may help the corporate managers to further their understanding on the level of risk taking among growth firms and which growth firms are fit for long term investment to improve their firm value. This empirical study may improves the company growth and mitigate risk to foster economic development in a country.

1.6 Scope of Study

This study investigates the effects of institutional ownership and growth opportunities on corporate risk taking behaviour among Malaysian public-listed firms. Similar to previous studies (Boubakri, Cosset and Saffar, 2013; Claessens, Djankov and Nenova, 2000; Teodora, 2009) this study focuses on non-financial firms which are well suited to this research objectives as it track institutional ownership. The firms are categorised by 10 industries based on the industry classification provided by Bursa Malaysia website. The sector includes construction, consumer product, industrial product, mining, plantation, property, information technology, trading and services, hotel and others. After filtration, the sample of this empirical study consists of 522 non-financial firms with 3,766 firm-year observations covering from year 2000 to 2014. The selected sample excludes financial firms because of the differences in the financial structure and regulations as compared to other industries (Rajan and Zingalis, 1995).

CHAPTER 2
LITERATURE REVIEWS

This chapter discussed about literature reviews from prior research to support this study where it separate into two parts:

2.1 Theoretical Review

2.2 Empirical Review

2.1 Theoretical Review

2.1.1 Agency Theory

Agency theory suggests that the engagement between the shareholders and the manager to execute certain service on their behalf that involves delegating some decision making authority to the agent (Jensen and Meckling, 1976). The separation of ownership and control by firms' growth and large ownership leads to the emergence of large organisations and the delegation of responsibility and authority (Bhandari, 2010). Therefore, agency problem thats exist from the self-interest of the managers is more complex in large and diversified organisation due to the complexity in their products and operations (Westman, 2009). The shareholders and manager in

the relationship are utility maximisers, whereby the managers have the tendency not to perform in the best interests of the shareholders. Managers are entrusted to take accountability in decision making, thus have fiduciary obligation to serve in the best interests of the firms by maximising shareholdings wealth. However, there would be divergence between the managers' decisions and those decisions that would maximise the welfare of the shareholders (Jensen and Meckling, 1976).

The agency theory suggests that manager risk taking have different practises where managers might be risk seeker as well as risk averse behaviours. The characteristics of agency theory emphasises on the risk behaviour of shareholders and managers (Barney and Hesterly, 1996). Managers with appropriate incentives can limit their disagreements with shareholders interest and incur less monitoring costs that is incurred to limit unusual activities of the managers. This way, managers would not make unnecessary decisions to expand resources harming the shareholders wealth. On the other hand, the incentive could safeguard the managers does take such action to compensates the shareholders.

2.1.2 Trade Off Theory

Trade off theory defined that how firms utilise debt finance and equity finance to balancing the costs and benefits. The capital structure is determined by a trade-off between the benefits of debt and the costs of debt. Most corporate finance literature suggests that the important key in the trade-off theory is taxation and burden bankruptcy cost are. The tax-bankruptcy trade-off perspective is that firms balance the tax benefits of debt against the burden costs of bankruptcy.

In agency perspective, debt might controlling the managers and reduce agency problems of free cash flow because debt must be repaid to avoid bankruptcy (Jensen and Meckling, 1976; Jensen, 1986). Even though, debt mitigates shareholders and managers' conflict, it exacerbates shareholders and debt holder conflicts (Stulz, 1990). Firms that have high earnings volatility face greater costs of financial distress and should use less debt. High earnings volatility could reduce the probability that tax protections will be fully utilised. Most capital structure theories argue that the type of assets owned by a firm affects its capital structure choice. The higher debt levels in a firms discourage shareholders to investing more due to threat of bankruptcy (Grossman and Hart, 1982).

2.2 Empirical Review

2.2.1 Corporate Risk Taking

Risk taking is a critical component to corporate success. Risk is defined as the uncertainty of a company's income stream (Bowman, 1980, 1982, 1984; Fiegenbaum and Thomas, 1985, 1986, 1988). Globalisation of technological development, trending in customers' demand and highly competitive market continuously leads to a challenging business worldwide (Westman, 2009). The nature of risk taking behaviour can significantly affect corporate performance. Prior research suggests that literature on innovation, organisational change and general management have a significant influence to risk taking behaviour and future performance (Kanter, 1983; Schon, 1971). Empirical studies suggests that global factor in financial settings that induce co-movements in financial settings across borders encourages firm to take greater

risks (Bruno and Shin, 2014). In brief, the global factor stimulates the firms to be risk seeker that results in increasing variability of firms' returns (Reeb and Baek, 1998).

Decision theory suggests that risk taking is important in decision making by standing in managerial ideology and growing interest in risk assessment and management (Allais, 1953; Arrow, 1965; Peters and Waterman, 1982; Crouch and Wilson, 1982). Empirical studies indicates that firms' decision making are not focused on the conceptions of risk, and risk taking by managers are not highlighted on managerial activities (Vlek and Stallen, 1980; Schoemaker, 1980, 1982; Slovic, Fischhoff and Lichtenstein, 1982). The decision making and understanding the concept of risk taking by managers remains relatively low. In brief, manager prefers greater expected returns in their decision making (Lindley, 1971).

Risk taking can influence firm performance such as by taking up innovative project to improve performance. Prior studies discussed that risk has positive influence on firm performance (Aaker and Jacobson, 1987). However, risk taking by low performance firms' did not influence future performance (Bowman, 1984). Empirical studies suggest that low performance firms that are further exposed high risk taking would continue to lead to low performance even though the study has controlled for the firm's past performance and industry performance (Philip, 1991). Inappropriate decisions in risk taking would unquestionably lead to firms' failure.

In 2008, the financial giant of the world collapsed. It is widely believed that the sub-prime mortgage loans problem had cultivated into a wide spread credit crunch that spans various asset markets throughout the world making it the worst economic crisis since the Great Depression of the 1930s (Vyas, 2009). The primary factor causing an economic catastrophe is the excessive risk taking that consequently leads to the

market turmoil (Schwarcz, 2015). Risk taking largely results from poor decisions, bad judgment, greed and this results not a criminal intent even most of the actions leads to the financial crisis (Hurt, 2014). In brief, risk taking can contribute positively to firm performance, but also can cause harm to firm if the level of risk taking becomes excessive.

2.2.2 Institutional Ownership

The role of institutional ownership have a significant influence on corporate value. Prior studies suggest that the existence of institutional investors have affected the market value of the firm by effective monitoring (Shleifer and Vishny, 1986). Empirical evidence find that the role of institutional investors have influence excess returns (Barclay and Holderness, 1990). This type of investors can efficiently monitor managers because they have appropriate incentives to influence the value of the firm in positive a way. The monitoring role played by the institutional investors are found to potentially reduce the managers' sub-optimal decisions.

Though institutional investor may have positive influence on corporate value, they may also have adverse effects. Active monitoring of institutional investors may improve firms value only at certain level of shareholdings, but once the level of institutional ownership exceed certain level there is this potential that active monitoring by institutional investors would bring adverse effect to firms value (Salehi, Hemaifar, Heydari, 2011). In brief, the role of Institutional institutions in monitoring firms decision making process could be harmful to the corporate value at higher ownership due to over monitoring.

Numerous corporate scandals, such as the recent 2008 financial crisis is due to inadequate monitoring also (Barney, 2009; Mohamad and Sulong, 2010; Erkens, Hung and Matos, 2012). The board of directors appears to be responsible in poor monitoring and the management has been blamed for excessive risk taking (Erkens, David, Mingyi and Pedro, 2012). Institutional ownership can play their role mitigate risk taking, as suggested by prior studies that have shown the capabilities of institutional ownership to monitor and control managerial activities (Shliefer and Vishny, 1986). On the other hand, institutional ownership could help in mitigating agency conflict by monitoring the managerial activities and even taking over the control of the firms. (Huddard, 1993; Admati et al., 1994; Maud, 1998). An empirical study using a sample of 569 Canadian non-financial firms suggests a negative relationship between institutional ownership and corporate risk taking.

In addition, empirical studies suggest that institutional investors demand for firms' transparency information asymmetry. It is argued that institutional ownership may affect firms' performance directly through their investment and indirectly by their ability to trade their shares (Gillian and Starks, 2002). Evidence from 434 non-financial firms in Malaysia find out that institutional ownership is associated to corporate governance but less positive for the period after 2001 (Effiezal, Janice, and Peter, 2008).

Yang, Chun, and Shamsher (2009) show that the level of income management, the percentage of outside directors and institutional shareholders in the industrial and consumer products sectors only are not related to corporate risk taking. The study is conducted using a sample of 613 non-financial firms from various industries listed Bursa Malaysia. Moreover, the results indicate that institutional ownership are

controlling the managerial opportunities in managing the reported net income. Prior studies on institutional ownership and corporate risk taking provide empirical results that there is a positive correlation between these two variables (Teodora, 2009). Institutional investors having ownerships in more than one company give them opportunity to invest in risker investment. Besides that, the author suggests that equity ownership is significant factor that contribute to risk taking activity.

2.2.3 Growth Opportunity

Note that, the relationship between growth opportunities and corporate risk taking is still unclear (John et al., 2008). Studies show that firms' willingness in taking up high risk taking by pursuing profitable investment is the fundamental long-term economic growth (Acemoglu and Zilibotti, 1997; Baumol, Robert and Schramm, 2007; DeLong and Summers, 1991; John et al., 2008). Empirical study among the United Kingdom (UK) firms argues that the issue of growth opportunities is associated to future growth opportunities (Danbolt, Hirst and Jone, 2011).

Corporate strategic investment requires firms to perpetrate resources for future growth (Woolridge and Snow, 1990; Amram and Kulatilaka, 1990). High risk taking by growth firms could create potential investment opportunities to generate profits (Kogut and Kulatilaka, 1994). Growth opportunities are important and frequently strengthen firms' competitive advantage and become the central concerns of corporate strategy (Woolridge and Snow, 1990; Hayes and Garvin, 1982; Kester, 1984). Corporate investment projects can be in the forms of internal or external, depending on the firms' need. Firms can cultivate valuable resources for competitive advantage,

resource accumulation within the firm and resource acquisition from the outside the firm (Dierick and Cool, 1989). External corporate investment includes joint ventures and acquisitions, while in-house corporate investment includes building new plants, advance technology, machinery replacement or product line extension. The increasing of demand in innovation provides higher growth opportunities and competition that force the managers to seek high risk taking investment projects to maximise shareholders wealth (Zingales, 2000; Cao, Simin and Zhao, 2008). The competition in the industry encourages the firms to be risk-seeker that comes from high growth opportunities investment projects (Pontiff, 2004).

Levered firms prefer investment projects with high growth opportunities that lead to high unpredictability earnings of the firm (Galai and Masulis, 1976). Increasing firm risk taking benefits the shareholders by increasing the value of equity at the same time reducing the market risk of equity. Firm growth is commonly studied at both the theoretical and empirical levels. According to Gibrat's law, firms' growth is independent of firm size. Empirical studies suggests that firm size and growth opportunity is rejected from the model while few studies have not been able to reject for large firms. It is widely accepted that not only the size and age but various strategies affected the rate of growth. Though, unpredictable of managerial decision making will be impossible to predict using current and past information about the operations of the firms that results corporate growth will be uncertain. Empirical studies suggests that the data in corporate growth opportunity is unsystematic and unpredictable (Geroski, Machin and Walters, 1997).

Firms with larger corporate innovations have higher firm risk taking where firm innovation and research and development (R&D) are used as proxy for growth

opportunity. Studies find out that there is positive relation between high risk taking and growth opportunity (Chan, Lakonishok and Sougiannis, 2001; Apedjinou and Vassalou, 2004). Increase in growth opportunity results in more capital and goods markets. Globalisation of the world's economies provides manager with more opportunities for growth while at the same time increasing competition. Additional evidence supports that reducing costs of capital motivates smaller firms to obtain financing for their operation by capture riskier growth opportunities because it is easier to access to capital widenings the option of growth opportunities (Li et al., 2004; Fama and French, 2004).

Equity ownership incentive plans increase the personal benefits for managers to pursuing growth opportunities by enhance corporate risk taking (Jensen and Meckling, 1976). Manager pursue growth oriented risk taking strategies to increase earnings volatility. Therefore, agency conflict among managers and shareholders leads to inappropriate decision making in firms' growth opportunity due to more flexibility in their future investments option. Previous studies indicate that high growth firms could affects the firm's future performance. Firms may bring more capital gains to institutional ownership than lower growth because institutional investors as taxpayers would prefer to invest in capital gain investment that would delay tax payments and avoid double taxation (Hovakimian and Tehranian, 2004).

In certain situation, the manager may actually wish to reduce the amount of such risk taking even though the shareholders prefers growth oriented risk taking. The capitalization of growth opportunities might beneficial for shareholders but the uncertainties in new ventures and technologies may hinder manager's commitment to corporate risk taking. Thus, managers might prefers low risk taking in order to reduce

personal costs when they lack appropriated incentives to monitor the firms. The personal costs includes potential loss of employment, the extra effort to master new technologies and the fears inherent in higher risk takings.

Presence of institutional ownership in firms predicts that to be effectively monitoring the manager for shareholders by encouraging them focus on growth risk opportunity oriented. In agency theory perspective, manager pursue growth risk taking strategies which increases high volatility in order to maximise shareholders' wealth. Prior studies suggests that institutional ownership is significant and positive to corporate risk taking in firms' growth opportunities (Chaganti and Damanpour, 1991). Their results are consistent with the arguments of Barclay and Holderness (1990), and Mikkelson and Ruback (1985, 1991). Specifically, this result suggests that institutional investors enhance corporate value through their positive influence on risk taking investment with growth opportunity. However, the insignificant relationship between institutional ownership and corporate risk taking for firms without growth prospects supports their estimation that increased risk taking by organisations lacking growth prospects may be without economic justification. (Wright, Ferris, Sarin and Awasthi, 1996).

CHAPTER 3
DATA AND METHODOLOGY

This chapter presents the data and methodology used in this study. The discussion are divided into five sub-sections as follow:

3.1 Research framework

3.2 Hypotheses development

3.3 Sample selection

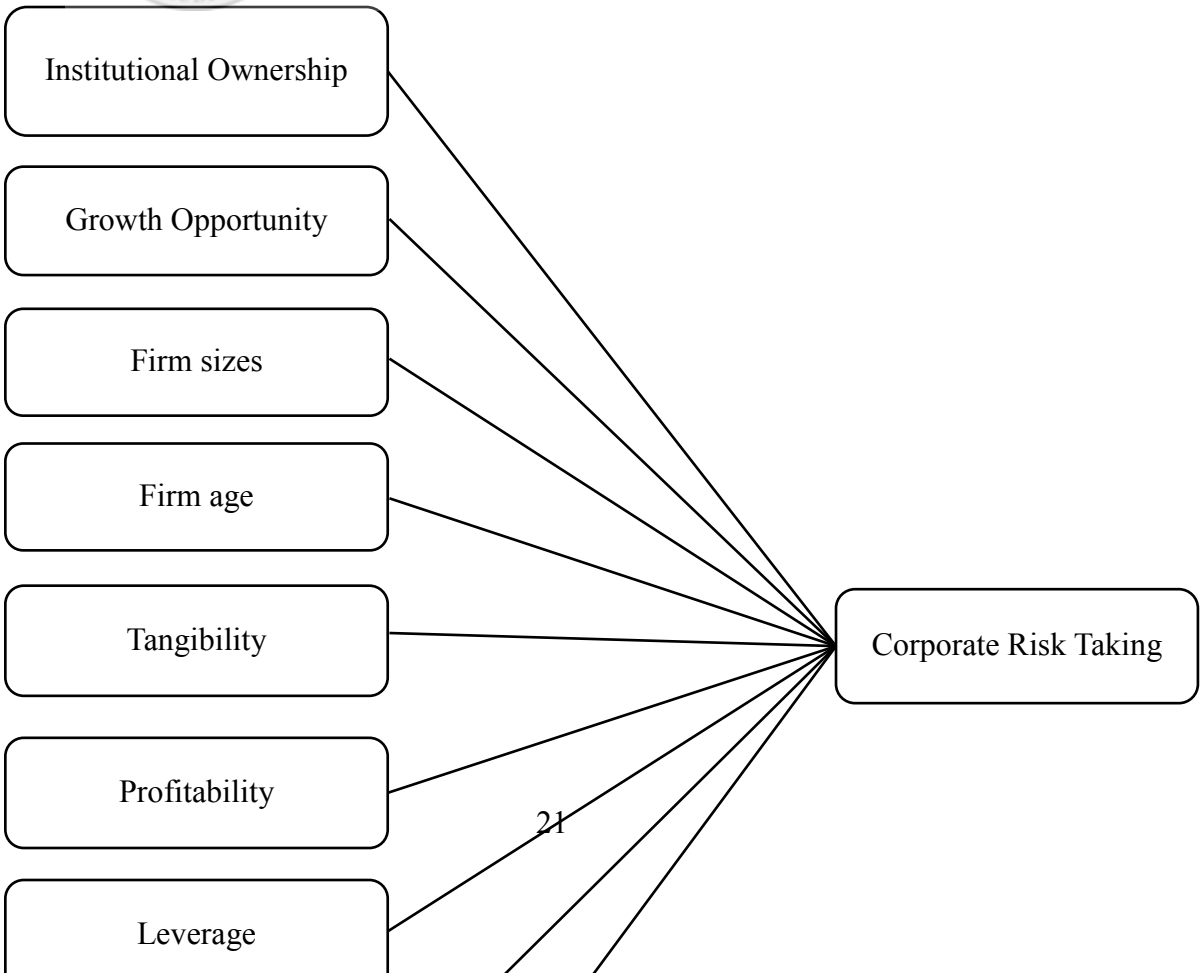
3.4 Variable specification

3.5 Research design

3.1 Research Framework

This section identifies the independent and dependent variables for this study. The research framework is constructed as follows:

Figure 3.1
Theoretical Framework



3.2 Hypotheses Development

This study tests whether institutional ownership could mitigate corporate risk taking behaviour and how firms' growth opportunities affect the level of risk taking. In line with the research questions and research objectives of this study, two hypotheses are developed as discussed in the following sub-sections.

3.2.1 Institutional Ownership and Corporate Risk Taking

Institutional ownership is often argues to have the capabilities to monitor and control managerial activities to safeguard and to mitigate the excessive risk taking (Shleifer and Vishny, 1986). The existing viewpoints on the monitoring role of institutional ownership and its effect on management decision making suggests the potential in improving the firm performance and influencing the firms risk taking behaviour. Empirical studies find that institutional ownership of Canadian non-financial firms have negative influence on the corporate risk taking behaviour (Gadhoum and Ayadi, 2003; Chen and Steiner, 1999). Similar relationship is also reported using evidence

from US firms (Teodora, 2009). Institutional ownership are shown to affect the firms' level of total and systematic risk exposure. Institutional shareholders could mitigate high risk taking by monitoring the managerial activities or taking over the control of the firms as institutional shareholders have greater incentives to monitor the management effectively (Huddard, 1993; Admati et al., 1994; Maud, 1998). Monitoring could also mitigate the agency conflict that transfer the cost of risk taking to shareholders. Based on these arguments, this study conjecture that:

> *Hypotheses 1: There is a significant negative relationship between institutional ownership and corporate risk taking.*

3.2.2 Growth Opportunities and Corporate Risk Taking

Risk taking behaviour is a vital firms' growth opportunities. It is interesting to examine under what conditions its shareholder might encourage corporate risk taking in order to exploit the potential benefits in firms' growth opportunity. Firms' growth opportunity have possibilities to possess its external environment such as its location in attractive industries because it's internal resources such as talented human resources, a valuable culture, or proprietary technology (Barney, 1991; Lado, Boyd, Wright, 1992; Wright et al., 1995; Wright et al., 1996). Previous studies found that corporate risk taking and firm growth are positively significant where high growth firm lead to high risk taking that increasing firm value (John, Litov and Yeung, 2008). Managers of lower growth firms reduce risk taking by not investing in innovation investment (Morck, Stangeland and Yeung, 2000). Therefore, low level of risk taking results in poor resources allocation and decrease growth opportunity (Durnev, Artyom, Li, Morck, and Yeung, 2004). Thus, increasing corporate risk taking in the

absence of growth opportunities would be economically irrational. Low growth firms have limitations in their external environments such as their location in diminishing industries and their internal resources are not valuable, rare, inefficient and are technologically stagnant (Barney, 1991; Lado, Boyd, and Wright, 1992; Wright, Ferris, Hiller, and Kroll, 1995; Wright, Ferris, Sarin and Awasthi, 1996). Based on the arguments, this study conjecture that:

Hypotheses 2: There is a significant relationship between firm growth opportunities and corporate risk taking.

3.3 Sample Selection

The sample consists of Malaysia non-financial firms listed on the main board of Bursa Malaysia. The sample excludes financial firms because of the differences in the financial structure and regulations as compared to other industries (Rajan and Zingalis, 1995). The panel data-set used in this study covers a 15-years timespan over the 2000 to 2014 sample period. After excluding missing observations, the final sample consists of 522 firms with 3,766 firm-year observations. The sample firms and the firm-specific information are collected from Data stream database, whereas the data on institutional ownership are collected from Thomson One database.

3.4 Variables Specification

3.4.1 Dependent Variables

This study considers four measures of risk taking. Following previous studies (John et al., 2008; Hilary and Hui, 2009; Acharya et al., 2011; and Faccio et al., 2011; Bourbakri et al., 2013), this study use volatility of corporate earnings as a proxy for corporate risk taking that also measures the level of firms' business risk (Teodora, 2009). *Risk1* is the standard deviation of return on asset (ROA) over three overlapping year. Volatility of returns is a standard proxy for risk taking in the literature (Faccio et al., 2011; Boubakri et al., 2012; Nakano and Nguyen, 2012). To ensure robust findings, this study also use the difference between the maximum and the minimum value of return on assets (ROA) to proxy for corporate risk-taking. This proxy is termed as *Risk2*. Return on asset (ROA) is defined as the ratio of earnings before interest and taxes to total assets. These two variables captures the riskiness of investment decisions or outcomes (Faccio et al., 2016; Kusnadi, 2015; Boubakri et al., 2012).

The third proxy of risk taking variable is *Leverage*, a measure of the riskiness of corporate financing choices (Faccio et al., 2016). A high levered firm is considered to be high risk and vice versa (Tong and Ning, 2004). The financial debt is the sum of long term debt and short term debt. Firm leverage is measured by total debt to assets, denoted as *Leverage1,* and also total debt to total capital, denoted as *Leverage2*. However, note that leverage is also used as a control variable when risk-taking is measured by *Risk1* and *Risk2*.

3.4.2 Independent Variables

This study identifies two key variables to examine the developed hypotheses. Institutional ownership is measured by the percentage of institutional ownership of a firm (Hartzell and Starks, 2002; Cornett et al., 2007). As per Hypothesis 1, the higher the ratio of institutional ownership, the lower the corporate risk-taking would be. A firms' growth opportunities is measured using market to book ratio. Previous studies predicts that growth opportunity increases the level of risk taking (Zingales, 2000; Cao, Simin and Zhao, 2008).

In addition, variables that are commonly associated to corporate risk taking behaviour are included as control variables (Claessens, Djankov and Nenova, 2001; John et al., 2008; Faccio et al., 2016; Acharya et al., 2011; Li, Griffin, Yue and Zhao, 2012). Firm size is measured using natural log of total assets in millions of Ringgit Malaysia (RM). A large firm has various abilities to exploit economies of scale and scope that help the firm to operate more effectively and generate superior performance relative to a small firm (Penrose, 1959). Small firms are more risk seeking than large firms because small firms have to take more risk to grow. Hence, a negative relationship between firm size and corporate risk taking is predicted. Conversely, large firms exhibit lower risk taking (John et al., 2008). This is because large size firms have better access to resources as compared to small firms. Thus, large size firms are more able to reduce the riskiness of their investment. Large firms also have more stable operations, in which the returns are less volatile (John et al., 2008; O'Brian and Bushan, 1990).

In addition, this study controls for firm age. Firm age is measured by the natural logarithm of the number of years since the firm first established to the year of observation. Firm age is predicted to be negatively related to risk taking behaviour.

Mature firms are not vulnerable to the liabilities of newness and enjoy superior performance because they are very experienced and enjoyed the benefits of learning (Stinchcombe, 1965). However, mature firms are disinterest and inflexible conventionality that goes along with age. They are less likely to make rapid adjustments and are likely to lose out in the performance stakes to younger firms (Marshall, 1920).

Tangibility is calculated as the ratio of net fixed assets to total assets. Referring to previous studies, this study uses this variables as a proxy for capital constraints (Faccio et al., 2016; Acharya, Amihud and Litov, 2011; Najjar, 2010). Tangibility indicates the firms' ability to secure debt financing, where tangible assets can be used as collaterals. Hence, firms with more tangible assets have the capacity to secure more debt financing. Empirical studies suggest that there is positive relationship between tangibility and corporate risk taking (Faccio et al., 2016).

Firm profitability is measured using return on asset (ROA), which is the ratio of earnings before interest and taxes (EBIT) to total assets. A profitable firm investing in high risk taking investment such as introducing new innovative products consequently making low profits in the main area of competition. Empirical studies suggests that firms' profitabilities have negative influence on corporate risk taking (Fiegenbaum and Thomas, 1988; Fiegenbaum, 1990). Less profitable firms are more likely to increase risk taking in an industry to influence the firms' performance level (Boubakri, Cosset and Saffar, 2012) than profitable firms as discussed earlier. Firms' leverage is also included as control variable when risk taking is measured by *Risk1* and *Risk2*. Firms' financial risk could leads to high earnings volatility. Previous

studies suggest that high levered firms are positively associated with high risk taking (Teodora, 2009).

3.5 Research Design

3.5.1 Empirical Model

This study uses panel ordinary least square (OLS) regression adjusted for robust standard error since the firms have both cross sectional and time series data. However, the panel data is unbalanced because some firm-year observations are missing.

The empirical model of this study is written as:

$$Risk_{it} = \beta_0 + \beta_1 Institutional\text{-}Ownership_{it} + \beta_2 Growth\text{-}Opportunity_{it} + \beta_3 Firm\text{-}Size_{it} + \beta_4 Firm\text{-}Age_{it} + \beta_5 Tangibility_{it} + \beta_6 Profitability_{it} + \beta_7 Leverage_{it} + \delta Year\ Dummies + \delta Industry\ Dummies + \varepsilon_{it}$$

This study uses four models with different measure of risk taking to examine the relationship between institutional ownership, growth opportunity and corporate risk taking on non-financial firm in Malaysia. Model 1 uses *Risk1* as the measure of risk taking, which is the standard deviation of return on assets (ROA) for three overlapping years. Model 2 includes *Risk2* to test the robustness of the hypothesized relationship that is measured by the difference between maximum and minimum of return on assets (ROA). On the other hand, this study uses *Leverage1* and *Leverage2* for Model 3 and model 4, respectively *Leverage1* is measured by total debt to total assets, while *Leverage2* is measure by total debt to total capital. The subscript *i* is denote for firm, *t* is denote for year and $\mathcal{E}$ denotes the error term.

3.5.2 Panel Ordinary Least Square (OLS) Regression

Referring to previous studies, this study employ panel ordinary least square (OLS) econometric method (Teodora, 2009; Nakano and Nguyen, 2012; Bourbakri, Cosset and Saffar, 2013) with corrected standard errors to perform the regression models. The OLS estimator depends on the underlying distribution of the errors, where it assumes that the unobserved error is normally distributed. The error term, $\mathcal{E}$ is independent of the explanatory variables. In this case, the error term is the sum of many different unobserved factors affecting corporate risk taking. The panel OLS regression model is still a preferred model because the normality of the OLS estimators is still approximately true in large samples even without normality of the errors (Vijverberg and Hasebe, 2015).

3.5.3 Statistical Analyses

Descriptive statistics is used to describe many pieces of data with a few keys. This study determines the means, standard deviation, the low values and high values of the sample firms. The statistics enable the researchers to indicate the spread out of a group's scores.

Pearson correlation coefficient test is used to analyze the correlation between the variables in this study. Correlation is a simple statistic that explains whether there's a relationship or association between any two variables. Correlations test is the most common statistic used in the association between any two variables. The correlation test are termed as correlation coefficient. The positive or the negative sign of the correlation coefficient indicates the direction of the correlation. The magnitude of the coefficient, on the other hand, indicates the extent of the correlation. The correlation ranges from -1.00 to +1.00. A correlation near to +1.00 signifies a high positive correlation between two variables, while a correlation near to -1.00 indicates a high negative correlation between two variables. Therefore to control for multicollinearity one of the variable has to be dropped from the regression model.

Variance inflation factor (VIF) computes the severity of multicollinearity problem in ordinary least squares regression analysis. It measures if the variance of an estimated regression coefficient increases due to collinearity problem. A variance inflation factor (VIF) less than 10.00 suggests that there is an insignificant multicollinearity problem. Multicollinearity occur when two or more predictor variables in a multiple regression model are highly correlated where one can be linearly predicted from the others with a substantial degree of accuracy.

CHAPTER 4
EMPIRICAL RESULTS AND DISCUSSION

This chapter discusses the results of the relationship between institutional ownership, growth opportunities and corporate risk taking behaviour. It reports the estimates of institutional ownership and growth opportunities along with the standard control variables used in the literature to explain corporate risk taking. The empirical results and discussion are divided into the following sub-sections:

4.1 Distribution of Sample Firms

4.2 Summary Statistics of the Identified Variables

4.3 Correlation Matrix of the Variables

4.4 Panel Data Regression Model

4.5 Robustness Checks

4.1 Distribution of Sample firms

The table 4.1 presents the sample distribution of 522 non-financial firms by year and industry over the period 2000 to 2014. The sample firms are grouped by different industries with reference to the Bursa Malaysia Industry Classification. From the table, 41.66% from industrial product, followed by consumer product 19.70% and construction 12.32%. Only 0.61% and 0.42% of the sample firms are involved in hotel and mining industry. The sample distribution by year suggest unbalanced panel data. Therefore, there is a need to control for industry and year dummies in the panel OLS regression.

Table 4.1

Distribution of Sample Firms Year and Industry

Distribution of Sample Firms					
Panel A : By Year			Panel B : By Industry		
Year	**Frequency**	**Percentage**	**Industry**	**N**	**%**
2000	94	2.50	Construction	464	12.32
2001	92	2.44	Consumer product	742	19.70
2002	105	2.79	Industrial product	1,569	41.66
2003	166	4.41	Mining	16	0.42
2004	211	5.60	Plantation	365	9.69
2005	248	6.59	Property	92	2.44
2006	327	8.68	Information technology	35	0.93
2007	303	8.05	Trading and Services	150	3.98
2008	277	7.36	Hotel	23	0.61
2009	334	8.87	Others	310	8.23
2010	376	9.98	**Total**	**3,766**	**100.00**
2011	325	8.63			
2012	329	8.74			
2013	297	7.89			
2014	282	7.49			
Total	**3,766**	**100**			

4.2 Summary Statistics of the Identified Variables

Table 4.2 reports the descriptive statistics of the identified variables. The definition of the variables are summarised in the Appendix. On average, the sample firms take 3.37% (7.78%) of risk as measured by *Risk1* (*Risk2)*. The average equity stakes held by institutional shareholders is 5.65%, with a maximum ownership of 83.60%. The mean value of growth opportunity, measured by market to book ratio is at -0.1704. This suggests that on average the sample firms' market value if below the book value. The mean value of firm size and profitability is 5.59% and 4.71%, respectively. On the other hand, the average tangibility ratio is 38.21%. As for the leverage, the sample

firms maintain an average 20.74% (25.81%) of debt ratio, measured by total debt to total assets (total debt to total capital).

Table 4.2

Summary Statistics of the Identified Variables

Variables	Mean	Standard Deviation	Min	Max
Risk1	0.0337	0.0858	0.0007	2.7060
Risk2	0.0778	0.1866	0.0016	5.7418
Institutional Ownership	0.0565	0.1141	0.0000	0.8360
Growth opportunity	-0.1704	0.7104	-2.4079	4.1534
Firm size	5.5980	0.5963	4.2845	8.0440
Leverage 1	0.2074	0.1695	0.0000	1.0000
Leverage 2	0.2581	0.2571	-8.5013	1.4246
Tangibility	0.3821	0.2102	0.0001	0.9634
Profitability	0.0471	0.1256	-0.7377	5.7610
Firm-year observation (N)	3766			

4.3 Correlation Matrix of the Variables

Table 4.3 presents Pearson correlation matrix for the variables. It reports the correlation coefficient of the variables of interest. The univariate relationship suggests that there is a negative relationship between institutional ownership and corporate risk taking with a correlation coefficient of -0.0607 for *Risk1* and -0.0639 for *Risk2*. As per expectation too, the univariate relationship shows that growth opportunity is positively related with corporate risk taking. The correlation test indicates that this study does not suffer from multicollinearity problem. This is also confirmed by the variance inflation factor (VIF) test, with a mean VIF of 6.42. A score less than 10.00 suggests an insignificant multicollinearity problem.

Table 4.3

Pearson Correlation Matrix for the Observed Variables

	Risk1	Risk2	Institutional Ownership	Growth Opportunity	Firm Size	Leverage1	Leverage2	Firm Age	Tangibility	Profitability
Risk1	1.0000									
Risk2	0.9991***	1.0000								
Institutional Ownership	-0.0607***	-0.0639***	1.0000							
Growth Opportunity	0.0572***	0.0614***	0.3151***	1.0000						
Firm Size	-0.1327***	-0.1381***	0.5361***	0.1782***	1.0000					
Leverage 1	0.0084	0.0083	0.0214	-0.0376**	0.1655***	1.0000				
Leverage 2	-0.0178	-0.0189	0.0293**	-0.0198	0.1590***	0.7535***	1.0000			
Firm Age	-0.0103	-0.0114	0.0722***	-0.0151	0.2858***	-0.0807***	-0.0816***	1.0000		
Tangibility	-0.0350**	-0.0348**	0.0306***	-0.0227	0.0088	0.1369***	0.0633***	-0.0205	1.0000	
Profitability	0.3186***	0.3140***	0.1056***	0.1964***	0.0923***	-0.1613***	-0.1272***	0.0274*	-0.0886***	1.0000

*The superscript asterisks ***, ** and * denote statistical significance at the 1%, 5% and 10% levels.*

4.4 Regression Analysis

4.4.1 Panel Ordinary Least Square (OLS) Regression adjusted for Robust Standard Errors

Table 4.4.1 reports the panel OLS estimation for the risk taking model where corporate risk taking is measured by *Risk1*, *Risk2*, *Leverage1* and *Leverage2*. For each model, this study reports the panel OLS regression estimates with robust standard error. The results suggest that institutional ownership is negatively associated with *Risk1*, *Risk2* and *Leverage1* in Models 1 to 3. This finding is consistent with the empirical studies of Chen and Steiner (1999), Gadhoum and Ayadi (2003), and Teodora (2009) that institutional ownership mitigates high risk taking through monitoring and controlling the management performance. This relationship is statistically significant at the 5% level when risk taking is measured by *Risk1* and 1% level when risk taking is measured by *Risk2* and *Leverage1*. In line with the arguments of the study, this evidence supports Hypothesis 1 which posits that institutional ownership could mitigate excessive risk taking. The negative relationship is economically significant too. Referring to Model 1 (*Risk1*) and Model 2 (*Risk2*) a standard deviation increase in the institutional ownership is able to decrease risk taking by 6.06%[1] (relating to mean 3.37%) and 6.26%[2] (relating to mean 7.78%), respectively. In Model 3 (*Leverage1*), a standard deviation increase in the institutional ownership decrease the risk taking by reducing the firms' leverage by 7.77%[3] (relating to mean 20.74%).

Coefficient of the variable or standard deviation of institutional investor divided by the mean of *Risk1, Risk2 and Leverage1*.

[1] (-0.0179 x 0.1141) / 0.0337 = -0.0606 (6.06%)

[2] (-0.0427 x 0.1141) / 0.0778 = -0.0626 (6.26%)
[3] (-0.1412 x 0.1141) / 0.2074 = -0.0776 (7.77%)

Table 4.4.1

Panel Ordinary Least Square (OLS) with Robust Standard Errors

Variables	(1) Risk1	(2) Risk2	(3) Leverage1	(4) Risk1	(5) Risk2	(6) Leverage2
Institutional Ownership	-0.0179**	-0.0427***	-0.1412***	-0.0219***	-0.0513***	-0.1944***
	(-2.4857)	(-2.6379)	(-4.7673)	(-2.9182)	(-3.0585)	(-5.1464)
Growth Opportunity	0.0051	0.0130	-0.0041	0.0049	0.0127	-0.0027
	(1.3529)	(1.5803)	(-0.7117)	(1.2697)	(1.4901)	(-0.2269)
Firm Size	-0.0313***	-0.0698***	0.0766***	-0.0292***	-0.0652***	0.1081***
	(-4.5624)	(-4.7251)	(11.7535)	(-4.3965)	(-4.5527)	(7.0358)
Leverage 1	0.0507***	0.1105***				
	(3.0158)	(3.0105)				
Leverage 2				0.0167	0.0357	
				(0.9698)	(0.9444)	
Firm Age	0.0058***	0.0128***	-0.0256***	0.0052***	0.0115***	-0.0411***
	(3.4853)	(3.4175)	(-6.0071)	(3.2304)	(3.1559)	(-3.7572)
Tangibility	0.0051	0.0107	0.1384***	0.0101	0.0215	0.1251***
	(0.6122)	(0.5778)	(8.9409)	(1.0737)	(1.0418)	(4.8216)
Profitability	0.2447**	0.5240*	-0.1932*	0.2390*	0.5115*	-0.2471*
	(1.9690)	(1.9268)	(-1.6717)	(1.8834)	(1.8413)	(-1.6904)
Constant	0.2212***	0.4975***	-0.2341***	0.2145***	0.4827***	-0.3106***
	(5.5883)	(5.7947)	(-5.0575)	(5.4871)	(5.6890)	(-4.6443)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,766	3,766	3,766	3,766	3,766	3,766
Adjusted R-squared	0.1535	0.1535	0.1368	0.1471	0.1470	0.0946

*The superscript asterisks ***, ** and * denote statistical significance at the 1%, 5% and 10% levels.*

Nonetheless, this study does not find evidence in support of the hypothesized positive relationship between growth opportunity and risk taking though the reported coefficient is positive. Therefore, the relationship between growth opportunities and corporate risk taking need to further explored as the results do not find any evidence to support Hypotheses 2. The findings on the relationship between institutional ownership, growth opportunity and corporate risk taking remain consistent when Model 1 to 3 are re-estimated using total debt to total capital (*Leverage2*) to proxy for leverage as reported in Model 4 to 6.

On the other hand, this study observes several significant relationships that are consistent with previous studies (John et al., 2008; Faccio et al., 2016). *Leverage1* measured by total debt to total assets is significantly and positively related to *Risk1* and *Risk2*, but this positive relationship becomes insignificant when Model 1 and Model 2 are re-estimated using total debt to total capital (refer to Model 4 and 5) to proxy for leverage.

In particular, this study finds that firm size loads negative for *Risk1* and *Risk2* and is statistical significant at the 1% level. This result is consistent with prior studies that larger firm are more likely to have stable operations in which the returns are less volatile and thus, are less prone to taking excessive risk. However, firm size is positively significant with *Leverage1* at the 1% level. The different signs suggest that large size firms less likely to take up risk related to investment decisions or outcomes as measured by *Risk1* and *Risk2* that capture the volatility of corporate earnings, but large size firm are inclined to taking up risk related to corporate financing choice, which is measured by *Leverage1*.

Conversely, firm age is positively related to corporate risk taking and this relationship is significant at 1% level for *Risk1* and *Risk2*, which is inconsistent with the expected negative relationship. But when risk taking is measured by *Leverage1* the coefficient is found to be negatively significant at the 1% level, suggesting that older firms are less prone to risk taking, while younger firms prefers high risk investment because they are more aggressive and need to take more risk to keep growing (Marshall, 1920; Stinchcombe, 1965). The change of signs does imply different risk taking preference, in this case it is between the riskiness related to investment outcomes and corporate financing choices. The coefficient of tangibility loads positive for all models but it is only significant in Models 3 and 6 when *Leverage1* and *Leverage2* are used to proxy for risk taking. The positive relationship is significant at the 1% level. Profitability is shown to be marginally significant at the 10%. It is positively related to *Risk1* and *Risk2* but is negatively related to *Leverage1* at 5% level.

4.5 Robustness Checks

This study continues with additional test to ensure the robustness of the reported results in Table 4.4.1. The baseline regression is re-estimated using alternative sample that only includes observations with institutional ownership. Firm-year observations with 0% of institutional ownership are excluded from the sample. The baseline regression is also repeated using sales growth as the alternative proxy of growth opportunity.

4.5.1 Panel Ordinary Least Square (OLS) Regression Using Alternative Sample

Table 4.5.1 reports the panel OLS with robust standard error for the alternative sample firms that only includes firm-year observations with institutional ownership greater than 0%. The alternative sample consists of 2,165 observations. The reported results show that negative relationship between institutional ownership and corporate risk taking remains statistically significant at the 1% level in all the six models. This further supports Hypothesis 1 that argues institutional ownership can mitigate firms risk taking behaviour. On the other hand, growth opportunity is found to be positively related to risk taking in Model 1, 2 and 4 to 6, at the 5% significance level. This is consistent with the findings from previous studies that high growth firms prefer high risk taking (Barney, 1991; Lado, Boyd, Wright, 1992; Wright et al., 1995; Wright et al., 1996).

Table 4.5.1

Panel Ordinary Least Square (OLS) Regression using Alternative Sample

Variables	(1) Risk1	(2) Risk2	(3) Leverage1	(4) Risk1	(5) Risk2	(6) Leverage2
Institutional Ownership	-0.0233*** (-3.8269)	-0.0552*** (-3.9088)	-0.0687** (-2.2807)	-0.0233*** (-3.8456)	-0.0552*** (-3.9283)	-0.0821** (-2.3146)
Growth Opportunity	0.0052** (2.2479)	0.0132** (2.4655)	0.0057 (0.9125)	0.0052** (2.2157)	0.0131** (2.4315)	0.0168** (2.0298)
Firm Size	-0.0103*** (-4.6975)	-0.0245*** (-4.8885)	0.0849*** (11.8800)	-0.0104*** (-4.6595)	-0.0245*** (-4.8485)	0.1110*** (12.4219)
Leverage 1	0.0041 (0.6495)	0.0094 (0.6421)				
Leverage 2				0.0035 (0.6688)	0.0079 (0.6606)	
Firm Age	0.0025 (1.5146)	0.0058 (1.4946)	-0.0199*** (-3.7330)	0.0025 (1.5075)	0.0058 (1.4872)	-0.0243*** (-3.7626)
Tangibility	-0.0006 (-0.0806)	-0.0008 (-0.0421)	0.1120*** (5.7594)	-0.0005 (-0.0658)	-0.0005 (-0.0272)	0.0984*** (4.1192)
Profitability	-0.0028 (-0.0668)	-0.0137 (-0.1438)	-0.4468*** (-7.7397)	-0.0023 (-0.0551)	-0.0127 (-0.1314)	-0.6583*** (-8.5864)
Constant	0.1192*** (5.9103)	0.2843*** (6.0036)	0.0910 (1.4042)	0.1193*** (5.9428)	0.2845*** (6.0366)	0.0762 (1.2189)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,165	2,165	2,165	2,165	2,165	2,165
Adjusted R-squared	0.0577	0.0606	0.1832	0.0578	0.0606	0.2015

*The superscript asterisks ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.*

4.5.2 Sales Growth to Proxy for Growth Opportunity

Table 4.5.2 reports panel OLS using sales growth as the alternative measure to proxy for growth opportunity to ensure robust findings. Correspondingly, institutional ownership is still negatively related to corporate risk taking but it is only significant in Models 3 and 6 where risk taking is measured by *Leverage1* and *Leverage2*. The relationship is still significant at the 1% level suggesting a support for Hypothesis 1 where institutional ownership could mitigate corporate risk taking. Growth opportunity is positively related to corporate risk takings only in Model 6. It is positively significant at the 10% level. These findings suggest consistent evidence in support of Hypothesis 1, but not Hypothesis 2. The reported results related to growth opportunity and corporate risk taking is rather mixed, thus could not provide a strong evidence to consistently support Hypothesis 2. As for the control variables, the estimates are qualitatively similar to those reported in the previous regression.

Table 4.5.2

Sales Growth to Proxy for Growth Opportunity

Variables	(1) Risk1	(2) Risk2	(3) Leverage1	(4) Risk1	(5) Risk2	(6) Leverage2
Institutional Ownership	-0.0080 (-0.7313)	-0.0171 (-0.7146)	-0.1493*** (-5.0774)	-0.0122 (-1.0711)	-0.0264 (-1.0567)	-0.1996*** (-4.3800)
Sales Growth	0.0027 (1.1255)	0.0061 (1.1546)	0.0023 (1.1536)	0.0027 (1.1470)	0.0062 (1.1769)	0.0043* (1.7870)
Firm Size	-0.0313*** (-4.5646)	-0.0697*** (-4.7300)	0.0766*** (11.7315)	-0.0292*** (-4.3986)	-0.0651*** (-4.5572)	0.1082*** (7.0307)
Leverage 1	0.0501*** (2.9674)	0.1091*** (2.9621)				
Leverage 2				0.0163 (0.9425)	0.0350 (0.9146)	
Firm Age	0.0056*** (3.3233)	0.0122*** (3.2394)	-0.0256*** (-5.9967)	0.0050*** (3.0668)	0.0109*** (2.9772)	-0.0411*** (-3.8469)
Tangibility	0.0049 (0.5773)	0.0098 (0.5279)	0.1396*** (8.9175)	0.0098 (1.0334)	0.0206 (0.9878)	0.1266*** (5.0352)
Profitability	0.2467** (2.0387)	0.5297** (2.0058)	-0.1981* (-1.7096)	0.2409* (1.9492)	0.5169* (1.9160)	-0.2524* (-1.7442)
Constant	0.2195*** (5.5541)	0.4934*** (5.7567)	-0.2333*** (-5.0106)	0.2129*** (5.4509)	0.4788*** (5.6488)	-0.3104*** (-4.6978)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,766	3,766	3,766	3,766	3,766	3,766
Adjusted R-squared	0.1533	0.1528	0.1368	0.1470	0.1464	0.0948

*The superscript asterisks ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.*

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

This study employs a sample of 522 non-financial firm from Bursa Malaysia to investigate the effects of institutional ownership and growth opportunity on corporate risk taking. Risk taking is essential determinant of profitability and decision making in a firms (Ravenscraft, 1983; Schmalensee, 1985). Thus, failure in understanding the risk taking behaviour in firms would undeniable lead to inappropriate decisions. This study suggests that institutional ownership is negatively associated with corporate risk taking. It is consistent with previous studies such as Chen and Steiner (1999), Gadhoum and Ayadi (2003) and Teodora (2009). Institutional ownership is commonly known as a monitoring device in corporate governance that could mitigate excessive risk taking. This argument is parallel with the results of this study. Previous studies find that the firms' growth opportunity is associated with corporate risk taking tend to be uncertainty (Pastor and Veronesi, 2003; Fama and French, 2004; Geroski, 2005). Similarly, the finding of this study suggests that the relationship between firms' growth opportunity and corporate risk taking is mixed. Hence, there is still room to further examine the relationship between growth opportunity and corporate risk taking.

This study contributes to the literature on corporate risk taking by investigating the role of institutional ownership and growth opportunities in affecting corporate risk taking behaviour. In brief, this study finds that institutional ownership plays an important position in risk taking by controlling and monitoring the firms to mitigate excessive risk taking.

The issue on corporate risk taking is relatively unexplored. The study on institutional ownership and corporate risk taking should be further explored to control for endogeneity problem, where institutional shareholders have different motivations that encourage them to invest in firms with different risk taking preferences. Moreover, the relationship between growth opportunities and corporate risk taking is still unclear and thus need to be further explored.

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